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**Axonal growth and connectivity from neural stem cell grafts in models of spinal cord injury.**

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**Authors:** Paul Lu, Ken Kadoya, Mark H Tuszynski

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**Public Summary:**

Spinal cord injury (SCI) damages both gray matter and white matter, but white matter damage is responsible for the vast majority of the subsequent functional loss. Neural stem cells (NSCs) have been investigated as a means of improving outcomes after SCI, either through neuroprotective properties that limit secondary damage or by direct cell replacement. This review will focus on cell replacement strategies, and the ability of multipotent NSCs to form new functional synaptic relays across sites of even severe SCI. The ability of these early stage neurons to extend axons from the lesion site in large numbers and over long distances constitutes an important mechanism underlying their potential to promote neural repair.

**Scientific Abstract:**

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